IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

1. (previously presented) An image tone level estimating method for estimating a tone level of an image, comprising:

dividing an original image into a plurality of image sub-areas;

computing a characteristic amount for each of the plurality of sub-areas producing characteristic amounts; and

computing a statistic amount for estimation of the tone color value level of a whole of the original image using the characteristic amounts for each of the plurality of sub-areas.

2. (withdrawn) The method according to claim 1, wherein said image is divided according to tone level information of a pixel forming the image.

3. (withdrawn) The method according to claim 1, wherein said statistic amount is computed using the characteristic amount for each said area and a weight coefficient corresponding to each said area.

4. (withdrawn) The method according to claim 3, wherein said statistic amount is obtained by adding the weight coefficient for each said area as a weight and computing a weighted average value between areas of the characteristic amount.

5. (withdrawn) The method according to claim 3, wherein said statistic amount is obtained by adding the weight coefficient for each said area as a weight and computing standard deviation of the characteristic amount.

6. (withdrawn) The method according to claim 3, wherein said weight coefficient is determined based on a number of pixels forming a corresponding the area.

7. (withdrawn) The method according to claim 6, wherein when the number of pixels forming the area is smaller than a predetermined threshold, a weight coefficient for the area is set to 0.

8. (withdrawn) The method according to claim 3, wherein said weight coefficient is determined corresponding to the area in a corresponding position on the image.

9. (withdrawn) The method according to claim 8, wherein when the position of the area is closer to a center of the image, the weight coefficient for the area is set to a larger value.

10. (withdrawn) The method according to claim 1, wherein a tone level of a pixel forming part of the image is converted into a brightness value, and the characteristic amount is computed using the conversion result.

11. (withdrawn) The method according to claim 1, wherein a tone level of a pixel forming part of the image is converted into a chroma value, and the characteristic amount is computed using the conversion result.

12. (withdrawn) The method according to claim 1, wherein characteristic amounts corresponding to respective pixels forming the image are averaged, and the characteristic amount is computed using an obtained average value.

13. (withdrawn) The method according to claim 1, wherein said image is divided into a plurality of areas according to tone level information and positional information about pixels forming the image.

14. (previously presented) An image correcting method for correcting an original image, comprising:

dividing an original image into a plurality of image sub-areas;

computing a characteristic amount for each of the plurality of sub-areas producing characteristic amounts;

computing a statistic amount for estimation of the tone color value level of a whole of the original image using the characteristic amounts for each of the plurality of sub-areas;

comparing the statistic amount with a predetermined value;

determining a correcting parameter based on the comparison result; and

correcting the original image using the correcting parameter.

15. (previously presented) An image correcting method for correcting an original image, comprising:

generating a plurality of corrected images by correcting the original image using a plurality of different correcting parameters;

dividing the plurality of corrected images respectively into a plurality of image sub-areas;

computing characteristic amounts for the plurality of sub-areas corresponding to the plurality of corrected images;

computing an image statistic amount indicating a tone color value level of a whole corrected image using the characteristic amounts for the plurality of sub-areas for the plurality of corrected images; and

defining a corrected image obtained using a correcting parameter corresponding to an image statistic amount closest to a predetermined value among the image statistic amounts as an appropriate corrected image.

16. (withdrawn) An image correcting method for correcting an original image, comprising:

a first step of generating a corrected image for the original image using any correcting parameter;

a second step of dividing the corrected image into a plurality of areas;

a third step of computing a characteristic amount for each of the plurality of areas;

a fourth step of computing a statistic amount indicating a status of a corrected image using the characteristic amount;

a fifth step of defining the corrected image as an appropriate corrected image when the computed statistic amount is close to a predetermined value, generating a corrected image for the original image by changing a value of the correcting parameter when the computed statistic amount is not close to the predetermined value, and transferring control to said second step.

17. (previously presented) An image correction apparatus which corrects an original image, comprising:

an area division unit dividing the original image into a plurality of image sub-areas;

a characteristic amount computation unit computing a characteristic amount for each of the plurality of sub-areas producing characteristic amounts;

a statistic amount computation unit computing a statistic amount indicating a tone level of a whole image using the characteristic amounts of each of the plurality of sub-areas;

a correcting parameter setting unit comparing the statistic amount with a predetermined value, and determining a correcting parameter based on a comparison result; and

an image correction unit correcting the original image using the correcting parameter.

18. (original) The apparatus according to claim 17, further comprising a weight coefficient computation unit computing a weight coefficient for each area, wherein said statistic amount computation unit computes the statistic amount using the characteristic amount for each area and the weight coefficient for each area.

19. (previously presented) An image correction apparatus which corrects an original image, comprising:

a first image correction unit correcting the original image using a plurality of correcting parameters and generating a plurality of corrected images;

an area division unit dividing each of the plurality of corrected images into a plurality of image sub-areas;

a characteristic amount computation unit computing a characteristic amount for each of the plurality of sub-areas producing characteristic amounts;

a statistic amount computation unit computing a statistic amount indicating a tone color value level of a whole image using the characteristic amounts of each of the plurality of sub-areas; and

a second image correction unit determining a corrected image obtained using the correcting parameter corresponding to the statistic amount closest to a predetermined value among the plurality of statistic amounts as a correction result.

20. (withdrawn) An image correction apparatus which corrects an original image, comprising:

an area division unit dividing the original image into a plurality of areas;

a first image correction unit correcting the original image divided into the plurality of areas using a plurality of correcting parameters, and generating a plurality of corrected images;

a characteristic amount computation unit computing a characteristic amount for each of a plurality of areas of the corrected images;

a statistic amount computation unit computing a statistic amount indicating a status of an image using the characteristic amount; and

a second image correction unit defining a corrected image obtained using the correcting parameter corresponding to a statistic amount closest to a predetermined value among the plurality of computed statistic amounts as a correction result.

21. (withdrawn) An image correction apparatus which corrects an original image, comprising:

an area division unit dividing the original image into a plurality of areas;

a characteristic amount computation unit computing a characteristic amount for each of the plurality of areas;

a characteristic amount correction unit correcting the characteristic amount using a plurality of correcting parameters, and generating a plurality of corrected characteristic amounts;

a statistic amount computation unit computing a statistic amount indicating a status of an image using the corrected characteristic amount; and

an image correction unit correcting the original image using the correcting parameter corresponding to a statistic amount closest to a predetermined value.

22. (withdrawn) n image correction apparatus which corrects an original image, comprising:

a correcting parameter setting unit setting a correcting parameter;

a first image correction unit correcting the original image using a correcting parameter set by said correcting parameter setting unit, and generating a corrected image;

an area division unit dividing the corrected image into a plurality of areas;

a characteristic amount computation unit computing a characteristic amount for each of the plurality of areas;

a statistic amount computation unit computing a statistic amount indicating a status of an image using the characteristic amount; and

a second image correction unit instructing said correcting parameter setting unit to set a previously presented correcting parameter if the computed statistic amount is closer to a predetermined value than a previously obtained statistic amount, and defining a corrected image obtained using the correcting parameter corresponding to the previously obtained statistic

amount as a correction result if the previously obtained statistic amount is closer to the predetermined value than the computed statistic amount.

23. (withdrawn) An image correction apparatus which corrects an original image, comprising:

an area division unit dividing the original image into a plurality of areas;

a correcting parameter setting unit setting a correcting parameter;

a first image correction unit correcting the original image divided into the plurality of areas using the correcting parameter set by said correcting parameter setting unit, and generating a corrected image;

a characteristic amount computation unit computing a characteristic amount for each of the plurality of areas of the corrected image;

a statistic amount computation unit computing a statistic amount indicating a status of an image using the characteristic amount; and

a second image correction unit instructing said correcting parameter setting unit to set a previously presented correcting parameter if the computed statistic amount is closer to a predetermined value than a previously obtained statistic amount, and defining a corrected image obtained using the correcting parameter corresponding to the previously obtained statistic amount as a correction result if the previously obtained statistic amount is closer to the predetermined value than the computed statistic amount.

24. (withdrawn) An image correction apparatus which corrects an original image, comprising:

an area division unit dividing the original image into a plurality of areas;

a characteristic amount computation unit computing a characteristic amount for each of the plurality of areas;

a correcting parameter setting unit setting a correcting parameter;

an characteristic amount correction unit correcting the characteristic amount using the correcting parameter set by said correcting parameter setting unit, and generating a corrected characteristic amount;

a statistic amount computation unit computing a statistic amount indicating a status of an image using the corrected characteristic amount; and

a second image correction unit instructing said correcting parameter setting unit to set a previously presented correcting parameter if the computed statistic amount is closer to a

predetermined value than a previously obtained statistic amount, and defining a corrected image obtained using the correcting parameter corresponding to the previously obtained statistic amount as a correction result if the previously obtained statistic amount is closer to the predetermined value than the computed statistic amount.

25-26. (canceled)

27. (withdrawn) An image correction apparatus which corrects an original image, comprising:

area division means for dividing the original image into a plurality of areas;

first image correction means for correcting the original image divided into the plurality of areas using a plurality of correcting parameters, and generating a plurality of corrected images;

characteristic amount computation means for computing a characteristic amount for each of a plurality of areas of the corrected images;

statistic amount computation for computing a statistic amount indicating a status of an image using the characteristic amount; and

second image correction means for defining a corrected image obtained using the correcting parameter corresponding to a statistic amount closest to a predetermined value among the plurality of computed statistic amounts as a correction result.

28. (withdrawn) An image correction apparatus which corrects an original image, comprising:

area division means for dividing the original image into a plurality of areas;

characteristic amount computation means for computing a characteristic amount for each of the plurality of areas;

characteristic amount correction means for correcting the characteristic amount using a plurality of correcting parameters, and generating a plurality of corrected characteristic amounts;

statistic amount computation means for computing a statistic amount indicating a status of an image using the corrected characteristic amount; and

image correction means for correcting the original image using the correcting parameter corresponding to a statistic amount closest to a predetermined value.

29. (withdrawn) An image correction apparatus which corrects an original image, comprising:

correcting parameter setting means for setting a correcting parameter;

first image correction means for correcting the original image using a correcting parameter set by said correcting parameter setting means, and generating a corrected image;

area division means for dividing the corrected image into a plurality of areas;

characteristic amount computation means for computing a characteristic amount for each of the plurality of areas;

statistic amount computation means for computing a statistic amount indicating a status of an image using the characteristic amount; and

second image correction means for instructing said correcting parameter setting means to set a previously presented correcting parameter if the computed statistic amount is closer to a predetermined value than a previously obtained statistic amount, and defining a corrected image obtained using the correcting parameter corresponding to the previously obtained statistic amount as a correction result if the previously obtained statistic amount is closer to the predetermined value than the computed statistic amount.

30. (withdrawn) An image correction apparatus which corrects an original image, comprising:

area division means for dividing the original image into a plurality of areas;

correcting parameter setting means for setting a correcting parameter;

first image correction means for correcting the original image divided into the plurality of areas using the correcting parameter set by said correcting parameter setting means, and generating a corrected image;

characteristic amount computation means for computing a characteristic amount for each of the plurality of areas of the corrected image;

statistic amount computation means for computing a statistic amount indicating a status of an image using the characteristic amount; and

second image correction means for instructing said correcting parameter setting means to set a previously presented correcting parameter if the computed statistic amount is closer to a predetermined value than a previously obtained statistic amount, and defining a corrected image obtained using the correcting parameter corresponding to the previously obtained statistic amount as a correction result if the previously obtained statistic amount is closer to the predetermined value than the computed statistic amount.

31. (withdrawn) An image correction apparatus which corrects an original image, comprising:

area division means for dividing the original image into a plurality of areas;

characteristic amount computation means for computing a characteristic amount for each of the plurality of areas;

correcting parameter setting means for setting a correcting parameter;

characteristic amount correction means for correcting the characteristic amount using the correcting parameter set by said correcting parameter setting means, and generating a corrected characteristic amount;

statistic amount computation means for computing a statistic amount indicating a status of an image using the corrected characteristic amount; and

second image correction means for instructing said correcting parameter setting means to set a previously presented correcting parameter if the computed statistic amount is closer to a predetermined value than a previously obtained statistic amount, and defining a corrected image obtained using the correcting parameter corresponding to the previously obtained statistic amount as a correction result if the previously obtained statistic amount is closer to the predetermined value than the computed statistic amount.

32. (previously presented) A computer-readable storage medium storing a program used to direct a computer for estimating a tone level of an image to perform a process, comprising:

dividing an original image into a plurality of image sub-areas;

computing a characteristic amount for each of the plurality of sub-areas producing characteristic amounts; and

computing a statistic amount for estimation of the tone color value level of a whole of the original image using the characteristic amounts for each of the plurality of sub-areas.

33. (previously presented) A computer-readable storage medium storing a program used to direct a computer for correcting an original image to perform a process, comprising:

dividing an original image into a plurality of sub-areas;

computing a characteristic amount for each of the plurality of sub-areas producing characteristic amounts;

computing a statistic amount for estimation of the tone color value level of a whole of the original image using the characteristic amounts for each of the plurality of sub-areas;

comparing the statistic amount with a predetermined value;

determining a correcting parameter based on the comparison result; and

correcting the original image using the correcting parameter.

34. (previously presented) A computer-readable storage medium storing a program used to direct a computer for correcting an original image to perform a process, comprising:

generating a plurality of corrected images by correcting the original image using a plurality of different correcting parameters;

dividing the plurality of corrected images respectively into a plurality of sub-areas;

computing characteristic amounts for the plurality of sub-areas corresponding to the plurality of corrected images;

computing an image statistic amount indicating a tone color value level of a corrected image using the characteristic amounts for a plurality of corrected images; and

defining a corrected image obtained using a correcting parameter corresponding to an image statistic amount closest to a predetermined value among the image statistic amounts as an appropriate corrected image.

35. (previously presented) A method, comprising:

statistically processing each of regions of an original image to produce statistical amounts for each of the regions;

deriving a statistical value for the entire original image from the processing of the statistical amounts for each of the regions; and

correcting a tone color value level of the image responsive to the statistical value.

36. (previously presented) A method of image tone color value level correction of an image, comprising:

dividing the image into sub-areas;

producing a statistical amount for each of the sub-areas of the image;

producing a statistical value for the entire original image from all of the statistical amounts of the sub-areas of the image; and

using the statistical value to correct a tone color value level of the entire image.

37. (new) A method of image tone color value level correction of an image having sub-areas, comprising:

determining a statistical amount for each of the sub-areas;

determining a statistical value for the entire image using all of the statistical amounts of the sub-areas of the image; and

using the statistical value to correct a tone color value level of the entire image.